

Differential Effects of Neighborhood Income Inequality and Median Family Income on Depressive Symptom Subscales for African Americans and Whites

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Background

- Depressive symptoms are a potent risk factor for a variety of health outcomes, including cardiovascular disease, obesity, diabetes, and mortality.
- African Americans may differ from Whites in the presentation of depressive symptoms, and are more likely to live in poorer neighborhoods.
- Area-level income and income inequality are related to depressive symptoms, but there is limited research on their interaction.

AIM:

To examine racial differences in the interaction of census-tract level income inequality and median family income on different components of depressive symptoms among participants enrolled in the Healthy Aging in Neighborhoods of Diversity Across the Life Span (HANDLS) study.

Methods

➤ Analysis sample:

- 2,151 African American and White adults in Baltimore City
- Recruitment through an area probability sample in selected neighborhoods likely to yield representative distributions of Baltimore City residents.
- Analysis exclusions: Neurological disease, severe mental illness, heart failure, and HIV/AIDS.

➤ Neighborhood Indicators

Drawn from the 2009 American Community Survey 5-year estimates.

- **Income Inequality:** The Gini Index quantifies how much the household income in a census tract differs from a proportionate distribution. Range: 0 (perfect equality) to 1 (perfect inequality).
- **Family Income:** Incomes of close family members ≥15 years are summed. Median family income in a census tract was used.

➤ Depressive Symptoms (CES-D):

The Center for Epidemiologic Studies-Depression Scale, a 20-item questionnaire, asks about how one has felt or behaved in the past week.

- Factor structure includes negative affect, positive affect, somatic complaints and interpersonal relations.

Figure 1. Median Family Income in Baltimore City by Census Tract

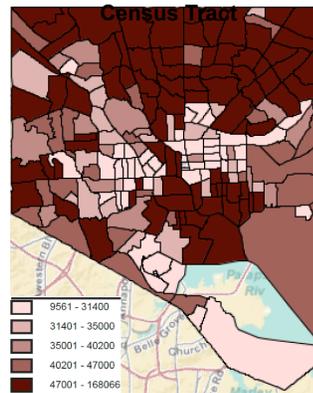
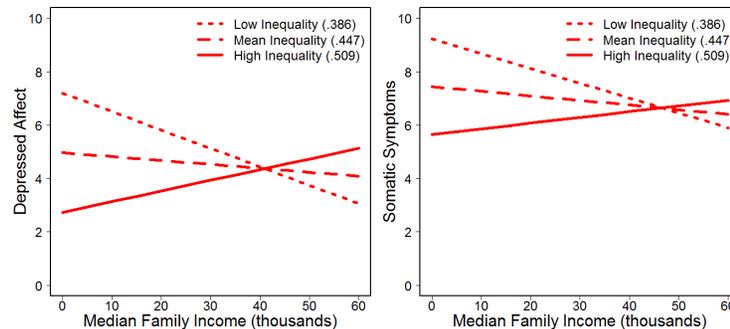


Table 1. Descriptive statistics.

Measure	African American (n=1,254)	White (n=894)
Age	47.52 (9.24)	47.84(9.43)
% Female	55.6%	55.9%
% Below Poverty*	44.3%	30.0%
Education*	12.39 (2.57)	12.89 (3.61)
% Antidepressant use*	5.5%	14.3%
Depressive Symptoms (CES-D)	14.18 (10.83)	14.27 (11.20)
Depressed Affect	4.30 (4.78)	4.38 (4.77)
Somatic Symptoms	6.71 (4.26)	6.40 (4.41)
Interpersonal Relations	1.00 (1.36)	0.93 (1.28)
Positive Affect*	2.17 (2.48)	2.56 (2.65)
Neighborhood Inequality (Gini Index)*	0.447 (0.062)	0.423 (.062)
Neighborhood Median Family Income*	\$37,389 (\$9,903)	\$42,363 (\$14,000)

Figure 2. Interactive Effect of Neighborhood Factors on Depressed Affect and Somatic Symptoms for African Americans



Analysis

- Separate linear regression models were constructed for African Americans and Whites for CES-D subscales: depressed affect, positive affect, and somatic symptoms.
 - Analysis in progress for interpersonal relations..
- **Covariates:** demographic, biomedical (body mass index, cancer, cardiovascular diseases, metabolic & inflammatory diseases, antidepressant medication use), and substance use risk factors.
- **Terms of interest:** Backwards elimination from interaction of neighborhood-level income inequality and median-family income.

Results

➤ For only African Americans, but not Whites, results revealed a significant interaction of income inequality and median family income with respect to: depressed affect ($b=.88$, $t(1235)=3.40$, $p < .001$) and somatic symptoms ($b=.62$, $t(1235)=2.70$, $p < .01$).

➤ In general, higher neighborhood income level was associated with higher levels of depressed affect and somatic symptoms for African Americans living in neighborhoods with high income inequality

➤ In contrast, higher neighborhood income levels were associated with lower levels of depressed affect and somatic symptoms for Whites.

Discussion

➤ Results revealed different patterns between neighborhood-level income inequality & median family income and components of depressive symptoms for African Americans and Whites.

➤ Findings suggest that, independent of individual-level factors, neighborhood socioeconomic factors may affect African Americans significantly more than Whites.

➤ This differential pattern may have consequences for disparate health outcomes.

➤ Future studies should investigate whether changes in neighborhood income inequality and/or median family income are associated with changes in depressive symptoms.